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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,722	08/13/2003	Hung-Jen Wei	ACMP0068USA	1721
27765	7590	09/22/2005	EXAMINER	
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116			BLACKMAN, ROCHELLE ANN J	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/604,722

Applicant(s)

WEI ET AL.

Examiner

Rochelle Blackman

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7,17,18,20 and 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7,17,18,20 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Response to Arguments

Applicant's arguments with respect to claims 1, 2, 4-7, 17, 18, 20, and 21 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The limitation, "wherein the reflective housing comprises an elliptic reflective housing", does not further limit the subject matter of claim 1 because the reflective housing in claim 1 is recited as being "substantially parabolic". The "reflective housing" cannot be both "parabolic" and "elliptic". It has to be one or the other.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 2, 4, 6, 7, 17, 18, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al. (U.S. Patent No. 2002/0064046) in view of Heitz et al. (U.S. Patent No. 6,056,405).

Regarding claim 1, Davis discloses an image projection system (see FIG. 7) comprising: light source (see 104, 106 of FIGS. 1-4) for generating a light beam; a reflective housing (see 102 and 108, 202, or 302 of FIGS. 1-4) comprising an opening (see smallest opening of elements 108, 202, or 302 in FIGS. 1-4), the opening having a diameter smaller than a maximum diameter of the reflective housing (see diameter of the above-described "opening" relative to the maximum diameter of "reflective housing" 102 and 108, 202, or 302 in FIGS. 1-4), the reflective housing forming an accommodating space (see the inside of "reflective housing" 102 and 108, 202, or 302 in FIGS. 1-4), the light source installed inside the accommodating space (see location of "light source" 104, 106 inside the above-described "accommodating space" in FIGS. 1-4) so that the light beam generated by the light source substantially propagates along an optical path through the opening away from the accommodating space, the optical path is a substantially parallel route by which the light beam propagates after being reflected by the reflective housing; and an invisible-light reflector (see 110 of FIG. 1 and

pg. 2, paragraphs [0023] and [0028]) installed at a reflecting position intersecting with the optical path outside the opening of the reflective housing, a normal of the invisible-light reflector and the optical path intersecting form predetermined angle (see pg. 2, paragraphs [0023] and [0028]) so that invisible light of the light beam emitted from the opening will be reflected back into the accommodating space; wherein the predetermined angle formed by the normal of the invisible-light reflector and the optical path is an acute angle not equal to zero degrees (see paragraph [0023] – since the “invisible-light reflector” 110 can be either perpendicular to the axis of the reflector, or tilted at angle to it, it is considered to form some sort of angle with the axis of the reflector that is less than 90 degrees, which would be an acute angle), so that infrared rays of the light beam reflected back into the accommodating space by the invisible-light reflector will not focus on the reflective housing.

Regarding claim 2, Davis discloses wherein the reflective housing comprises an elliptic reflective housing (see shape of “reflective housing” 102 and 108, 202, or 302 of FIGS. 1-4), and the light source is installed at a focal point of the elliptic reflective housing (see location of “light source” 104, 106 relative to “elliptic reflective housing” 102 and 108, 202, or 302 in FIGS. 1-4), and the optical path is a major axis of the elliptic reflective housing (see optical path of “elliptic reflective housing” 102 and 108, 202, or 302 in FIGS. 1-4).

Regarding claims 4, Davis discloses wherein the image projection system further comprising a light tube (see 104, 106 in FIGS. 1-4) connected to the light source, wherein the infrared rays of the light beam reflected back into the accommodating

space by the invisible-light reflector will not focus on the light tube (see paragraph [0028]).

Regarding claim 6, Davis discloses wherein the image projection system further comprises an image module (see 708 of FIG. 7), the image module comprising a plurality of controllable optical reflectors (see *micromirror device* in paragraph [0039]) for modulating the light beam passing through the invisible-light reflector to generate a projecting beam containing an optical image, wherein the light beam passing through the invisible-light reflector does not comprise the infrared rays (see paragraph [0028]).

Regarding claim 7, Davis discloses wherein the image module is a digital micromirror device (see *micromirror device* on pg. 3, in paragraph [0039]).

Regarding claim 17, Davis discloses an image module (see 708 of FIG. 7), wherein the image module liquid crystal panel (see *liquid crystal device* on pg. 3, in paragraph [0039]).

Regarding claim 18, Davis discloses wherein the invisible-light reflector is immediately adjacent to the reflective housing along the optical path/major axis (see location of “invisible-light reflector” 110 relative to “reflective housing 102 and 108 in FIG. 1 and see FIG. 6).

Regarding claim 20, Davis discloses an image projection system (see FIG. 7) comprising: light source (see 104, 106 of FIGS. 1-4) for generating a light beam; a reflective housing (see 102 and 108, 202, or 302 of FIGS. 1-4) comprising an opening (see smallest opening of elements 108, 202, or 302 in FIGS. 1-4), the reflective housing forming an accommodating space (see the inside of “reflective housing” 102 and 108,

202, or 302 in FIGS. 1-4), the light source installed inside the accommodating space (see location of "light source" 104, 106 inside the above-described "accommodating space" in FIGS. 1-4) so that the light beam generated by the light source substantially propagates along an optical path through the opening away from the accommodating space; and an invisible-light reflector (see 110 of FIG. 1 and pg. 2, paragraphs [0023] and [0028]) installed at a reflecting position intersecting with the optical path outside the opening of the reflective housing, a normal of the invisible-light reflector and the optical path intersecting form predetermined angle (see pg. 2, paragraphs [0023] and [0028]) so that invisible light of the light beam emitted from the opening will be reflected back into the accommodating space; wherein the predetermined angle formed by the normal of the invisible-light reflector and the optical path is an acute angle not equal to zero degrees (see paragraph [0023] – since the "invisible-light reflector" 110 can be either perpendicular to the axis of the reflector, or tilted at angle to it, it is considered to form some sort of angle with the axis of the reflector that is less than 90 degrees, which would be an acute angle), so that infrared rays of the light beam reflected back into the accommodating space by the invisible-light reflector will not focus on the parabolic reflective housing.

Regarding claim 21, Davis discloses wherein the optical path is a parallel route by which the light beam propagates after being reflected by the parabolic reflective housing (see optical path and/or axis of "light source" 104, 106 and "elliptic reflective housing" 102 and 108, 202, or 302 in FIGS. 1-4).

Davis does not appear to disclose a reflective housing that is "parabolic shaped" or a "parabolic" reflective housing.

Heitz teaches using a reflective housing that is parabolic shaped or a parabolic reflective housing (see 106 of FIG. 4 and col. 5, lines 63-64).

It would have been obvious to one ordinary skill in the art at the time the invention was made to use a reflector that is parabolic instead of elliptic, as taught by Heitz for the purpose of minimizing positional and parallelism errors (see col. 3, lines 57-61).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al. (U.S. Patent No. 2002/0064046) in view of Heitz et al. (U.S. Patent No. 6,056,405) as applied to claim 1 above, and further in view of Lemke (U.S. Patent No. 5,615,938).

Davis and Heitz disclose the claimed invention except for the acute angle and/or predetermined angle being "smaller than 45 degrees".

Lemke teaches providing an angle and/or predetermined angle formed by a normal of an invisible-light reflector (see 5 of FIGS. 1-5 and 7) and the optical path

being an acute angle that is smaller than 45 degrees (see angle formed by the normal of "invisible-light reflector" 5 and the optical light path of lamp 3 in FIGS. 1-5 and 7).

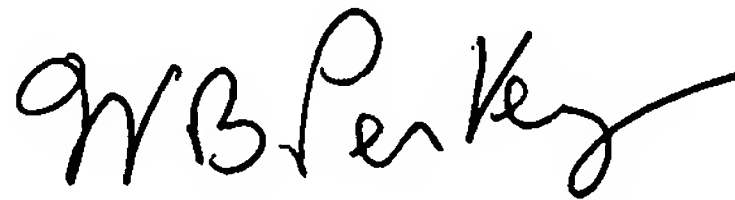
It would have been obvious to one of ordinary skill in the art at the time the invention was made to tilt the "invisible-light reflector" in the "image projection system" of the combined Davis and Heitz reference at an acute angle "smaller than 45 degrees", as taught by Lemke in order to effectively reflect radiation out of the light beam (see col. 4, lines 6-10).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



RB

William Perkey
Primary Examiner